# WATER SUPPLY OUTLOOK

## KOOTENAI RIVER BASIN

## MONTANA

*as of*

MARCH 1, 1966

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Data included in this report were obtained in cooperation with other Federal, State and private organizations

The current water supply outlook is for near average streamflow for the April-September period.

Snow measurements made near the first of March in British Columbia and Montana indicate the mountain snow pack is about 10 percent less than a year ago and very near the 1948-62 average. In general, the snow cover is a little higher, percentagewise, in the headwaters of the Kootenai River.

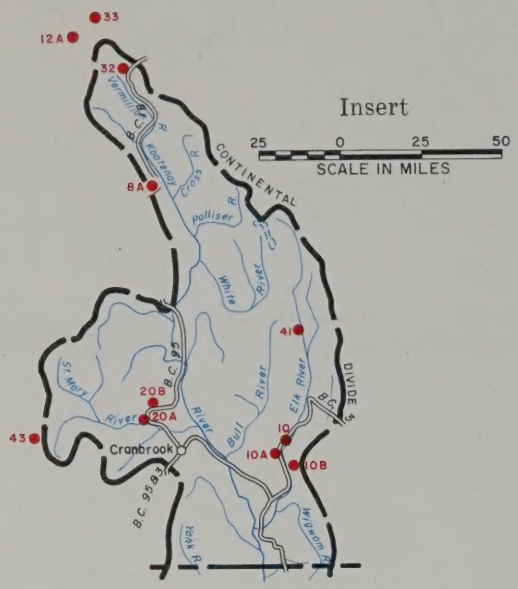
Moisture in the soil under the snow pack is above average and will increase the runoff from the snow pack.

Streamflow is forecast to be a little above average in the main Kootenai. Tributary streams in Montana are expected to produce about average to a little above average streamflow during the spring and summer.

*Report prepared by*
P.E. FARNES AND S.E. COOK
U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE
BOX 855, BOZEMAN, MONTANA 59715

*"The Conservation of Water begins with the Snow Survey"*

# KOOTENAI RIVER BASIN




LEGEND

- Snow Survey Course
- Soil Moisture Station
- Snow Course and Soil Moisture Station
- Aerial Marker at Snow Course
- Stream Gaging Station
- Drainage
- S.W.C.D. Boundary
- Watershed Boundary
- Highway
- Town
- County Boundary
- State Boundary

See Insert

C A N A D A

I D A H O

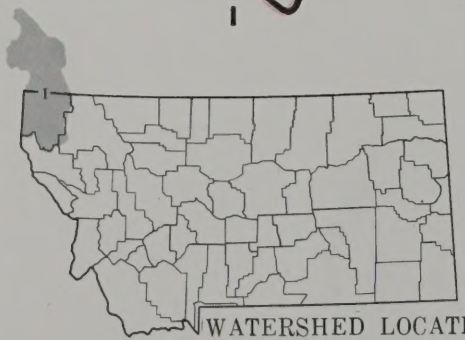
L I N C O L N

F L A T H E A D

L I N C O L N S. W. C. D.

14A07
14A11
15AD1
U.S. 93
Rexford
Eureka
Yaak River
Tobacco River
MONT. 37
RIVER
3050
3045
U.S. 2
Yaak
Troy
Warland
Libby
3030
KOOTENAI
Creek
14A04
Fisher
Libby Creek
3020
Wolf
Happy Inn
River
15A021
15B11
15B15
U.S. 2

10 0 10
SCALE IN MILES



WATERSHED LOCATION

WATERSHED I

# SNOW SURVEY DATA

## AS OF MARCH 1, 1966

(Inches)

| SNOW COURSE | | | CURRENT DATA | | | PAST RECORD | |
|---|---|---|---|---|---|---|---|
| | | | DATE OF SURVEY | SNOW DEPTH | WATER CONTENT | WATER CONTENT | |
| NO. | NAME | ELEVATION | | | | LAST YEAR | AVERAGE |
| 15B11 | Baree Creek | 5500 | 3/1 | 115 | 38.5 | 45.8 | - |
| 15B16 | Baree Midway | 4600 | 3/1 | 98 | 30.9 | - | - |
| 15B15 | Baree Trail | 3800 | 3/1 | 44 | 11.2 | 12.1 | - |
| 14A04 | Brush Creek | 5000 | 2/28 | 40 | 10.6 | 13.2 | 12.7* |
| BC 10 | Fernie | 3500 | 2/25 | 35 | 10.0 | 12.6 | 9.0 |
| BC 12A | Field | 4200 | 2/27 | 27 | 5.1 | 8.2 | 5.8 |
| BC 11 | Glacier | 4100 | 2/27 | 85 | 28.0 | 21.7 | 24.0* |
| 14A11 | Graves Creek | 4300 | 3/2 | 53 | 15.3 | 19.9 | - |
| BC 43 | Gray Creek | 5100 | 2/28 | 53 | 15.4 | 16.7 | 16.7* |
| BC 33 | Kicking Horse | 5400 | 2/27 | 48 | 13.0 | 16.4 | 13.3 |
| BC 20B | Kimberley | 3800 | 2/27 | 29 | 8.8 | 10.4 | 8.4 |
| BC 32 | Marble Canyon | 5000 | 2/28 | 52 | 16.3 | 12.8 | 13.5 |
| BC 10B | Morrissey Ridge | 6100 | 2/28 | 73 | 27.5 | 32.5 | - |
| BC 10A | New Fernie | 4100 | 2/25 | 47 | 15.3 | 19.1 | 13.2* |
| 15A01 | Red Mountain | 6000 | 3/3 | 60 | 17.8 | 20.0 | 18.0 |
| BC 8A | Sinclair Pass | 4500 | 2/28 | 25 | 6.6 | 5.1 | 5.8* |
| BC 20A | Sullivan Mine | 5100 | 2/25 | 39 | 12.5 | 12.5 | 13.4 |
| BC 41 | Upper Elk River | 4400 | 2/26 | 23 | 6.5 | 9.0 | 7.9 |
| 14A07 | Weasel Divide | 5450 | 3/2 | 81 | 28.2 | 35.4 | 30.4* |

# SOIL MOISTURE DATA

## AS OF MARCH 1, 1966

(Inches)

| SOIL MOISTURE STATION | | | SOIL PROFILE | | CURRENT DATA | | PAST RECORD | |
|---|---|---|---|---|---|---|---|---|
| | | | DEPTH | FIELD CAPACITY | DATE OF SURVEY | SOIL MOISTURE | LAST YEAR | **AVERAGE |
| NO. | NAME | ELEVATION | | | | | | |
| 15B15M | Baree Trail | 3800 | 48 | 7.5 | 3/1 | 6.3 | 6.3 | - |
| 14A10M | Murphy Lake R.S. | 3000 | 48 | 22.6 | 3/2 | 19.5 | 21.7 | - |
| 15A02M | Raven R.S. | 3050 | 48 | 23.0 | 3/2 | 21.8 | 21.9 | - |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

# WATER SUPPLY FORECASTS

WATERSHED I

**AS OF** MARCH 1, 1966

(1000 Acre Feet)

| NO. | RIVER AND FORECAST POINT | FORECAST PERIOD | FORECAST THIS YEAR | PERCENT AVERAGE | MEASURED FLOW | |
|---|---|---|---|---|---|---|
| | | | | | LAST YEAR* | AVERAGE |
| | FISHER RIVER | | | | | |
| 3020 | Jennings (near) | Apr-Sept | 320 | 100 | | 318 |
| | KOOTENAI RIVER | | | | | |
| 3030 | Libby (at) | Apr-Sept | 8650 | 107 | 8040 | 8096 |
| | YAAK RIVER | | | | | |
| 3045 | Troy (near) | Apr-Sept | 565 | 102 | | 555 |
| | KOOTENAI RIVER | | | | | |
| 3050 | Leonia (at) | Apr-Sept | 9900 | 106 | 9131 | 9327 |

*PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

# WATER SUPPLY OUTLOOK

## FLATHEAD RIVER BASIN

## MONTANA

*as of*

MARCH 1, 1966

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Data included in this report were obtained in cooperation with other Federal, State and private organizations

The current water supply outlook is for near to a little below average streamflow in the Flathead River drainage.

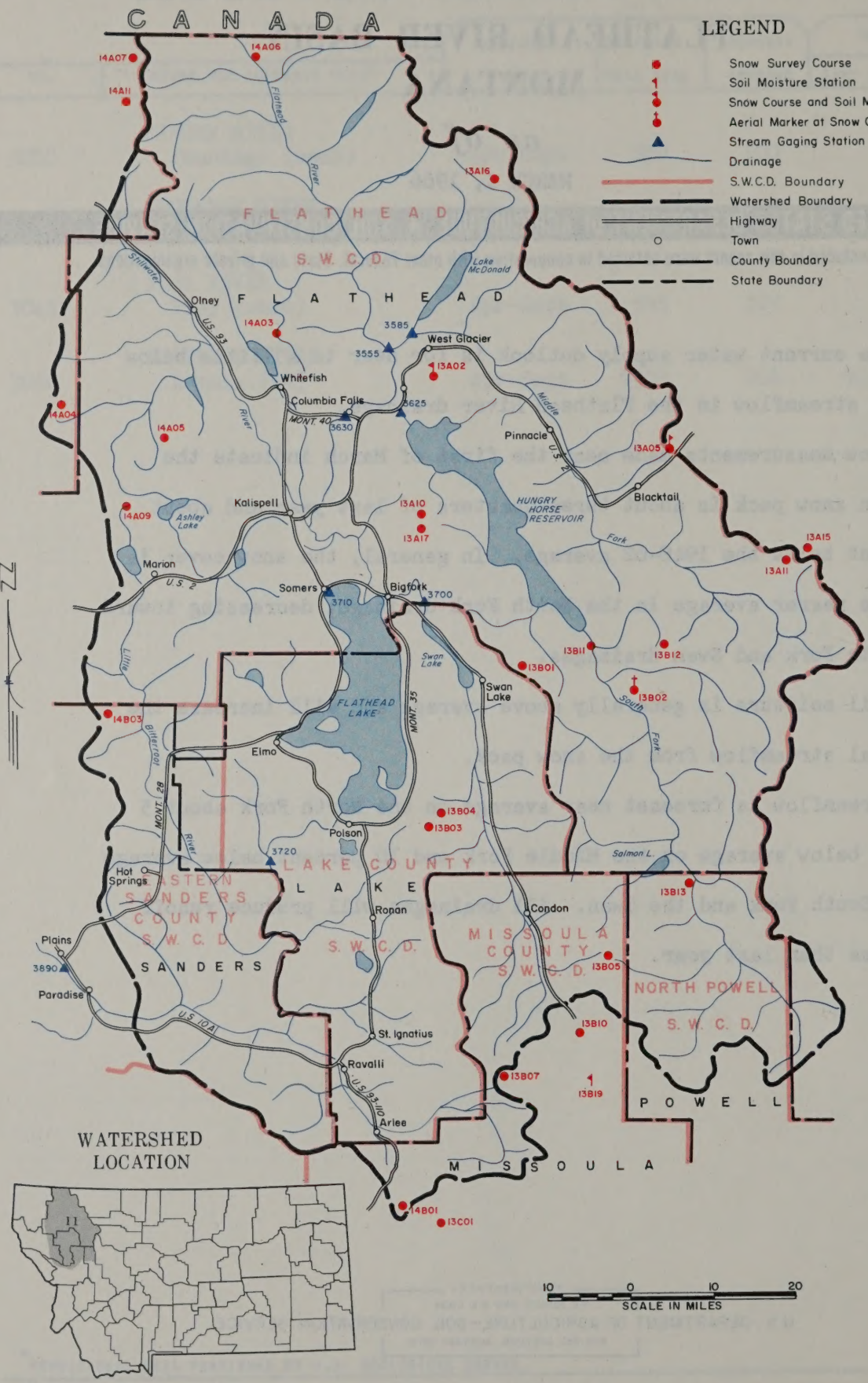
Snow measurements made near the first of March indicate the mountain snow pack is about three-quarters of last year and about 5 percent below the 1948-62 average. In general, the snow cover is a little nearer average in the North Fork drainage, decreasing toward the South Fork and Swan drainages.

Soil moisture is generally above average and will increase the potential streamflow from the snow pack.

Streamflow is forecast near average on the North Fork about 5 percent below average on the Middle Fork and 10 percent below average on the South Fork and the Swan. All drainages will produce runoff much less than last year.

*Report prepared by*
P.E. FARNES AND S.E. COOK
U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE
BOX 855, BOZEMAN, MONTANA 59715

# FLATHEAD LAKE RIVER BASIN



# SNOW SURVEY DATA

WATERSHED II

AS OF MARCH 1, 1966

(Inches)

| SNOW COURSE | | | CURRENT DATA | | | PAST RECORD | |
|---|---|---|---|---|---|---|---|
| | | | DATE OF SURVEY | SNOW DEPTH | WATER CONTENT | WATER CONTENT | |
| NO. | NAME | ELEVATION | | | | LAST YEAR | AVERAGE |
| 13A15 | Badger Pass | 6900 | 2/25 | 76 | 28.7 | 38.6 | - |
| 14B03 | Bassoo Peak | 5150 | 2/28 | 44 | 10.8 | 10.0 | 11.1* |
| 13A11 | Beaver Lake | 5900 | 2/25 | 54 | 17.5 | 25.7 | - |
| 13B03 | Big Creek | 6750 | 3/2 | 87 | 30.8 | 48.4 | 38.5 |
| 14A04 | Brush Creek | 5000 | 2/28 | 40 | 10.6 | 13.2 | 12.7* |
| 13A17 | Camp Misery | 6400 | 3/1 | 101 | 35.2 | 54.2 | 33.0* |
| 13B10 | Coyote Hill | 4200 | 3/3 | 30 | 8.4 | 13.4 | 10.2 |
| 13A02 | Desert Mountain | 5600 | 2/25 | 36 | 12.5 | 20.0 | 14.1* |
| 13B04 | Fatty Creek | 5500 | 3/2 | 54 | 17.2 | 23.4 | 10.0* |
| BC 10 | Fernie | 3500 | 2/25 | 35 | 10.0 | 12.6 | 9.0 |
| 14A11 | Graves Creek | 4300 | 3/2 | 53 | 15.3 | 19.9 | - |
| 14A09 | Griffin Creek Divide | 5150 | 3/1 | 36 | 9.8 | 12.6 | 12.4* |
| 13B12 | Gunsight Lake | 6300 | 2/25 | 87 | 32.5 | 45.7 | - |
| 14A03 | Hell Roaring Divide | 5770 | 3/1 | 76 | 25.9 | 35.3 | 26.8* |
| 13B13 | Holbrook | 4530 | 2/25 | 29 | 7.9 | 12.7 | 10.2* |
| 14A06 | Kishenehn | 3890 | 2/25 | 32 | 8.8 | 13.2 | 9.9 |
| 14A05 | Logan Creek | 4300 | 2/28 | 34 | 8.0 | 8.8 | 8.8* |
| 13A05 | Marias Pass | 5250 | 2/25 | 48 | 15.8 | 21.0 | 17.3 |
| 13A16 | Mineral Creek | 4000 | 2/28 | 61 | 17.8 | 26.1 | 19.8 |
| BC 10B | Morrissey Ridge | 6100 | 2/28 | 73 | 27.5 | 32.5 | - |
| BC 10A | New Fernie | 4100 | 2/25 | 47 | 15.3 | 19.1 | 13.2* |
| 13B07 | North Fork Jocko | 6330 | 3/3 | 98 | 33.8 | 49.8 | 39.8 |
| 13B02 | Spotted Bear Mountain | 7000 | 3/3 | 45 | 13.7 | 19.7 | 14.6 |
| 13C01 | Stuart Mountain | 7400 | 2/26 | 74 | 25.1 | 32.7 | 26.5* |
| 13B01 | Trinkus Lake | 6100 | 3/3 | 94 | 32.6 | 48.9 | 36.3* |
| 14B01 | TV Mountain | 6800 | 2/25 | 49 | 15.4 | 21.7 | 14.9* |
| 13B11 | Twin Creeks | 3580 | 3/3 | 42 | 12.6 | 14.6 | 12.4* |
| 13B05 | Upper Holland Lake | 7000 | 3/3 | 80 | 26.5 | 39.1 | 29.8* |
| 14A07 | Weasel Divide | 5450 | 3/2 | 81 | 28.2 | 35.4 | 30.4* |

# SOIL MOISTURE DATA

AS OF MARCH 1, 1966

(Inches)

| SOIL MOISTURE STATION | | | SOIL PROFILE | | CURRENT DATA | | PAST RECORD | |
|---|---|---|---|---|---|---|---|---|
| | | | DEPTH | FIELD CAPACITY | DATE OF SURVEY | SOIL MOISTURE | LAST YEAR | **AVERAGE |
| NO. | NAME | ELEVATION | | | | | | |
| 13A02M | Desert Mountain | 5600 | 54 | 8.4 | 2/25 | 7.3 | 7.5 | 7.0 |
| 13A05M | Marias Pass | 5250 | 54 | 6.5 | | | 5.8 | 5.3 |
| 13B19M | Seeley Lake | 4030 | 48 | 11.9 | 3/1 | 9.9 | - | - |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

# WATER SUPPLY FORECASTS

WATERSHED II

AS OF MARCH 1, 1966

(1000 Acre Feet)

| NO. | RIVER AND FORECAST POINT | FORECAST PERIOD | FORECAST THIS YEAR | PERCENT AVERAGE | MEASURED FLOW LAST YEAR* | MEASURED FLOW AVERAGE |
|---|---|---|---|---|---|---|
| | NORTH FORK FLATHEAD RIVER | | | | | |
| 3555 | Columbia Falls (near) | Apr-Sept | 2000 | 99 | | 2027 |
| | MIDDLE FORK FLATHEAD RIVER | | | | | |
| 3585 | West Glacier (near) | Apr-Sept | 1800 | 94 | 2208 | 1923 |
| | SOUTH FORK FLATHEAD RIVER | | | | | |
| 3625 | Columbia Falls (near)(7) | Apr-Sept | 2120 | 89 | 2831 | 2381 |
| | FLATHEAD RIVER | | | | | |
| 3630 | Columbia Falls (at)(7) | Apr-Sept | 6080 | 93 | 7472 | 6497 |
| | SWAN RIVER | | | | | |
| 3700 | Big Fork (near) | Apr-Sept | 620 | 89 | | 694 |
| | FLATHEAD RIVER | | | | | |
| 3720 | Polson (near)(8) | Apr-Sept | 7200 | 93 | 9216 | 7778 |

(7) Adjusted for storage in Hungry Horse Reservoir.
(8) Adjusted for storage in Hungry Horse Reservoir and Flathead Lake.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

# RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1966

(1000 Acre Feet)

| NO. | RESERVOIR | USABLE CAPACITY | THIS YEAR | LAST YEAR | AVERAGE |
|---|---|---|---|---|---|
| 3620 | Hungry Horse | 3428.0 | 2272.0 | 2370.0 | 2436.3 |
| 3710 | Flathead Lake | 1791.0 | 918.3 | 1143.0 | 845.1 |
| 3756 | Camas (4) | 45.2 | 28.8 | 20.3 | 32.2 |
| 3801 | Mission Valley (8) | 100.3 | 58.7 | 39.3 | 34.5 |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

# WATER SUPPLY OUTLOOK
## LOWER CLARK FORK RIVER BASIN
## MONTANA
## *as of*

MARCH 1, 1966

**UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE**

Data included in this report were obtained in cooperation with other Federal, State and private organizations

The current water supply outlook is for much below average runoff from tributaries in the upper area of the drainage to a little below average from downstream tributaries.

Snow measurements made near the first of March indicate the mountain snow pack averages about three-quarters of last year, and 90 percent of average.

In the Clark Fork and Bitterroot headwaters, snow cover is about 70 to 75 percent average, while the Flathead has about 94 percent average.

Moisture in the soil under the snow pack is generally near to above average.

Streamflow is forecast about three-quarters average on the upper portions of the Clark Fork, increasing to about 10 percent below average below the Flathead. Streams tributary to the main Clark Fork in the Missoula to St. Regis area should produce 75 to 85 percent average flow. Downstream tributaries are forecast 85 to 95 percent average.

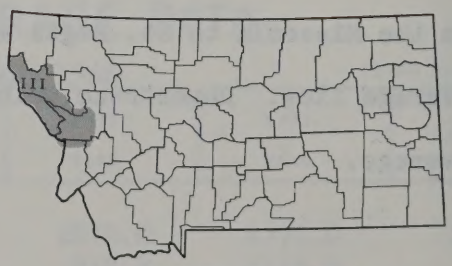
*Report prepared by*
P.E. FARNES AND S.E. COOK
U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE
BOX 855, BOZEMAN, MONTANA 59715

*"The Conservation of Water begins with the Snow Survey"*

# LOWER CLARK FORK RIVER BASIN

## LEGEND

- Snow Survey Course
- Soil Moisture Station
- Snow Course and Soil Moisture Station
- Aerial Marker at Snow Course
- Stream Gaging Station
- Drainage
- S.W.C.D. Boundary
- Watershed Boundary
- Highway
- Town
- County Boundary
- State Boundary



WATERSHED LOCATION

WATERSHED III

# SNOW SURVEY DATA

## AS OF MARCH 1, 1966

(Inches)

| SNOW COURSE | | | CURRENT DATA | | | PAST RECORD | |
|---|---|---|---|---|---|---|---|
| | | | | | | WATER CONTENT | |
| NO. | NAME | ELEVATION | DATE OF SURVEY | SNOW DEPTH | WATER CONTENT | LAST YEAR | AVERAGE |
| 13C16 | Ambrose | 6480 | 3/2 | 39 | 10.2 | 14.8 | 12.1* |
| 15B11 | Baree Creek | 5500 | 3/1 | 115 | 38.5 | 45.8 | - |
| 15B16 | Baree Midway | 4600 | 3/1 | 98 | 30.9 | - | - |
| 15B15 | Baree Trail | 3800 | 3/1 | 44 | 11.2 | 12.1 | - |
| 14B03 | Bassoo Peak | 5150 | 2/28 | 44 | 10.8 | 10.0 | 11.1* |
| 13B10 | Coyote Hill | 4200 | 3/3 | 30 | 8.4 | 13.4 | 10.2 |
| 14C10 | Heart Lake Trail | 4800 | 3/3 | 71 | 21.4 | 23.8 | - |
| 15C01 | Hoodoo Creek | 5900 | 3/3 | 107 | 34.6 | 52.3 | 45.3* |
| 14C05 | Lolo Pass | 5230 | 2/25 | 62 | 20.2 | 34.0 | 32.2* |
| 15B02 | Lookout | 5250 | 2/28 | 88 | 27.1 | 33.5 | 34.8* |
| 13C21 | Lubrecht Forest No. 3 | 5450 | 2/27 | 25 | 6.9 | 8.2 | 7.4* |
| 13C22 | Lubrecht Forest No. 4 | 4650 | 2/27 | 15 | 3.6 | 4.2 | 3.9* |
| 13C08 | Lubrecht Forest No. 6 | 4040 | 2/27 | 17 | 3.8 | 5.0 | 4.6* |
| 13B07 | North Fork Jocko | 6330 | 3/3 | 98 | 33.8 | 49.8 | 39.8 |
| 14C04 | Savage Pass | 6600 | 3/1 | 73 | 21.4 | 29.4 | 25.0* |
| 13C02 | Slide Rock Mountain | 7100 | 2/25 | 35 | 10.0 | 17.6 | 12.6* |
| 13C18 | Spring Gulch | 6000 | 2/26 | 38 | 10.3 | 16.0 | 10.5* |
| 13C01 | Stuart Mountain | 7400 | 2/26 | 74 | 25.1 | 32.7 | 26.5* |
| 14B01 | TV Mountain | 6800 | 2/25 | 49 | 15.4 | 21.7 | 14.9* |

# SOIL MOISTURE DATA

## AS OF MARCH 1, 1966

(Inches)

| SOIL MOISTURE STATION | | | SOIL PROFILE | | CURRENT DATA | | PAST RECORD | |
|---|---|---|---|---|---|---|---|---|
| NO. | NAME | ELEVATION | DEPTH | FIELD CAPACITY | DATE OF SURVEY | SOIL MOISTURE | LAST YEAR | **AVERAGE |
| 15B15M | Baree Trail | 3800 | 48 | 7.5 | 3/1 | 6.3 | 6.3 | - |
| 14C05M | Lolo Pass | 5250 | 48 | 10.6 | 2/25 | 6.2 | 7.4 | - |
| 13B19M | Seeley Lake | 4030 | 48 | 11.9 | 3/1 | 9.9 | - | - |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

# WATER SUPPLY FORECASTS

WATERSHED III

AS OF MARCH 1, 1966

(1000 Acre Feet)

| NO. | RIVER AND FORECAST POINT | FORECAST PERIOD | FORECAST THIS YEAR | PERCENT AVERAGE | MEASURED FLOW | |
|---|---|---|---|---|---|---|
| | | | | | LAST YEAR* | AVERAGE |
| | BLACKFOOT RIVER | | | | | |
| 3400 | Bonner (near) | Apr-Sept | 850 | 82 | 1355 | 1036 |
| | CLARK FORK RIVER | | | | | |
| 3404 | Milltown (above)(4) | Apr-Sept | 570 | 71 | 1199 | 802 |
| | CLARK FORK RIVER | | | | | |
| 3405 | Missoula (above) | Apr-Sept | 1420 | 77 | 2554 | 1838 |
| | BITTERROOT RIVER | | | | | |
| 3528 | Missoula (at)(6) | Apr-Sept | 1180 | 76 | | 1553 |
| | CLARK FORK RIVER | | | | | |
| 3530 | Missoula (below) | Apr-Sept | 2600 | 77 | | 3391 |
| | CLARK FORK RIVER | | | | | |
| 3545 | St. Regis (at) | Apr-Sept | 3600 | 78 | 6134 | 4642 |
| | CLARK FORK RIVER | | | | | |
| 3890 | Plains (near)(8) | Apr-Sept | 11150 | 87 | 15780 | 12793 |
| | THOMPSON RIVER | | | | | |
| 3895 | Thompson Falls (near) | Apr-Sept | 270 | 89 | | 302 |
| | PROSPECT CREEK | | | | | |
| 3907 | Thompson Falls (at) | Apr-Sept | 142 | 86 | | 165 |
| | CLARK FORK RIVER | | | | | |
| 3920 | Whitehorse Rapids (at)(9) | Apr-Sept | 12650 | 88 | 17390 | 14398 |

(4) Difference in observed flow, Clark Fork above Missoula and Blackfoot near Bonner.
(6) Difference in observed flow, Clark Fork above and below Missoula.
(8) Adjusted for storage in Flathead Lake and Hungry Horse Reservoir.
(9) Adjusted for storage in Flathead Lake, Hungry Horse and Noxon Reservoirs.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

# RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1966

(1000 Acre Feet)

| NO. | RESERVOIR | USABLE CAPACITY | THIS YEAR | LAST YEAR | AVERAGE |
|---|---|---|---|---|---|
| 3913 | Noxon Rapids | 334.6 | 308.3 | 287.3 | - |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

# WATER SUPPLY OUTLOOK
## UPPER CLARK FORK RIVER BASIN
## MONTANA

*as of*

MARCH 1, 1966

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Data included in this report were obtained in cooperation with other Federal, State and private organizations

The current water supply outlook is only Fair to Poor. Late season water irrigation supplies are expected to be below average.

Those who do not have a good water right or supplemental storage should be prepared for the possibility of a late season shortage. It might be well to check with your local SCS Work Unit as information has just been received on alternatives for adapting operations to a variable irrigation water supply.

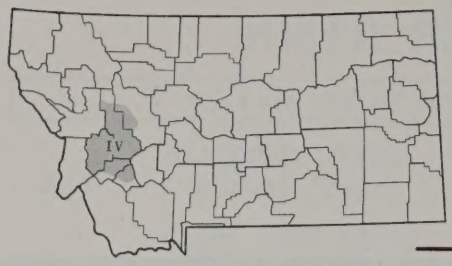
Snow surveys made near the first of March indicate the mountain snow pack is only about one-half of a year ago and 74 percent of average. Moisture in the soil under the snow pack is above average and will help increase the runoff from the short snow crop.

Streamflow on the Upper Clark Fork tributaries is forecast to be only slightly above the low flows of 1961. The Blackfoot is forecast a little higher but is still low.

Percentagewise, streams and creeks in the Upper Clark Fork are expected to produce only 70 to 75 percent of their average spring and summer runoff. The Blackfoot is forecast around 80 percent average.

*Report prepared by*
P.E. FARNES AND S.E. COOK
U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE
BOX 855, BOZEMAN, MONTANA 59715

# UPPER CLARK FORK RIVER BASIN




WATERSHED LOCATION

10 0 10 20
SCALE IN MILES

N

MISSOULA S.W.C.D.

LEWIS & CLARK S.W.C.D.

NORTH POWELL S.W.C.D.

DEER LODGE VALLEY S.W.C.D.

GRANITE S.W.C.D.

DEER LODGE MILE HIGH S.W.C.D.

MISSOULA

LEWIS & CLARK

POWELL

GRANITE

DEER LODGE

JEFFERSON

SILVER BOW

RAVALLI

Ovando
Lincoln
Bonita
Bearmouth
Drummond
Hall
Gold Creek
Avon
Elliston
Garrison
Maxville
Deer Lodge
Phillipsburg
Wormsprings
Anaconda
Butte

3385
3404
3355
3301
3300
3295
3250
3320

MONT. 20
U.S. 10 & 12
U.S. 10A
MONT. 38
U.S. 12
U.S. 91
U.S. 10

NEVADA CREEK RES.

Blackfoot River
Little Blackfoot River
Clark Fork
Nevada Creek
Flint Creek
Rock Creek

12811 12810
13C14 13C08 13C22 13C21
13C08 12C01
13C02 13C16
13C10 13C09 13C13
12C02 12C03 12C04 12C05
13C11 13C12 13C03 13C04 13C15 13C05 13C06 13C07
12D01

## LEGEND

- Snow Survey Course
- Soil Moisture Station
- Snow Course and Soil Moisture Station
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- Drainage
- S.W.C.D. Boundary
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- Town
- County Boundary
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WATERSHED IV

# SNOW SURVEY DATA

AS OF MARCH 1, 1966

(Inches)

| SNOW COURSE | | | CURRENT DATA | | | PAST RECORD | |
|---|---|---|---|---|---|---|---|
| | | | DATE OF SURVEY | SNOW DEPTH | WATER CONTENT | WATER CONTENT | |
| NO. | NAME | ELEVATION | | | | LAST YEAR | AVERAGE |
| 13C16 | Ambrose | 6480 | 3/2 | 39 | 10.2 | 14.8 | 12.1* |
| 13C13 | Black Pine | 7100 | 2/28 | 34 | 9.3 | 16.4 | 11.3* |
| 13C13 | Black Pine Pillow | 7100 | 2/28 | SP | 8.8 | - | - |
| 12C05 | Chessman Reservoir | 6200 | 3/1 | 13 | 2.2 | 3.8 | 4.0 |
| 12B10 | Copper Creek | 5700 | 2/23 | 40 | 12.4 | 16.8 | - |
| 12B11 | Cotter Mine | 6250 | 2/23 | 43 | 13.1 | 20.0 | - |
| 13C09 | El Dorado Mine | 7800 | 2/24 | 38 | 10.8 | 25.2 | 17.6* |
| 13C11 | Fred Burr Pass | 8000 | 3/1 | 58 | 15.4 | 33.0 | 23.8* |
| 13C10 | Gold Creek Lake | 7200 | 2/24 | 31 | 8.6 | 18.4 | 13.4* |
| 13C04 | Intergaard | 6450 | 3/1 | 25 | 5.7 | 10.1 | 7.2 |
| 13C21 | Lubrecht Forest No. 3 | 5450 | 2/27 | 25 | 6.9 | 8.2 | 7.4* |
| 13C22 | Lubrecht Forest No. 4 | 4650 | 2/27 | 15 | 3.6 | 4.2 | 3.9* |
| 13C08 | Lubrecht Forest No. 6 | 4040 | 2/27 | 17 | 3.8 | 5.0 | 4.6* |
| 12D01 | Pipestone Pass | 7200 | 3/1 | 21 | 3.6 | 5.2 | 4.5 |
| 13C12 | Red Lion | 7100 | 3/1 | 43 | 10.0 | 21.8 | 13.8* |
| 13C03 | Skalkaho Summit | 7260 | 2/26 | 56 | 17.2 | 32.6 | 22.5* |
| 13C02 | Slide Rock Mountain | 7100 | 2/25 | 35 | 10.0 | 17.6 | 12.6* |
| 13C05 | Southern Cross | 6500 | 3/1 | 22 | 5.5 | 7.8 | 5.6 |
| 12C01 | Stemple Pass | 6600 | 2/28 | 31 | 7.1 | 11.9 | 9.2 |
| 13C07 | Storm Lake | 7780 | 3/1 | 36 | 7.6 | 16.4 | 11.7* |
| 13C06 | Stuart Mill | 6500 | 3/1 | 23 | 4.8 | 7.8 | 5.9 |
| 12C02 | Ten Mile Lower | 6600 | 3/1 | 20 | 3.8 | 7.7 | 6.3 |
| 12C03 | Ten Mile Middle | 6800 | 2/28 | 27 | 6.1 | 12.1 | 9.1 |
| 12C04 | Ten Mile Upper | 8000 | 2/28 | 31 | 7.6 | 16.3 | 11.7 |

SP - Snow Pillow observation - water content only.

# SOIL MOISTURE DATA

AS OF MARCH 1, 1966

(Inches)

| SOIL MOISTURE STATION | | | SOIL PROFILE | | CURRENT DATA | | PAST RECORD | |
|---|---|---|---|---|---|---|---|---|
| | | | DEPTH | FIELD CAPACITY | DATE OF SURVEY | SOIL MOISTURE | LAST YEAR | **AVERAGE |
| NO. | NAME | ELEVATION | | | | | | |
| 13C13M | Black Pine | 7100 | 48 | 10.0 | 2/28 | 5.2 | - | - |
| 13C15M | Georgetown Lake | 6450 | 48 | 9.0 | 3/1 | 3.6 | 2.8 | 2.8 |
| 12C03M | Skalkaho Summit | 7260 | 48 | 10.8 | 2/26 | 10.0 | 8.9 | - |
| 12C08M | Stemple Pass | 6350 | 48 | 5.9 | 2/28 | 4.4 | 4.2 | - |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

# WATER SUPPLY FORECASTS

WATERSHED IV

AS OF MARCH 1, 1966

(1000 Acre Feet)

| NO. | RIVER AND FORECAST POINT | FORECAST PERIOD | FORECAST THIS YEAR | PERCENT AVERAGE | MEASURED FLOW LAST YEAR* | MEASURED FLOW AVERAGE |
|---|---|---|---|---|---|---|
| | FLINT CREEK | | | | | |
| 3301 | Boulder Creek (below)(3) | Apr-Sept | 52.0 | 71 | 110 | 73.0 |
| | MIDDLE FORK ROCK CREEK | | | | | |
| 3320 | Philipsburg (near) | Apr-Sept | 58.0 | 75 | | 77.8 |
| | BLACKFOOT RIVER | | | | | |
| 3400 | Bonner (near) | Apr-Sept | 850 | 82 | 1355 | 1036 |
| | CLARK FORK RIVER | | | | | |
| 3404 | Milltown (above)(4) | Apr-Sept | 570 | 71 | 1199 | 802 |

(3) Sum, Flint Creek at Maxville and Boulder Creek at Maxville.
(4) Difference in observed flow, Clark Fork above Missoula and Blackfoot near Bonner.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

# RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1966

(1000 Acre Feet)

| NO. | RESERVOIR | USABLE CAPACITY | THIS YEAR | LAST YEAR | AVERAGE |
|---|---|---|---|---|---|
| 3250 | Georgetown Lake | 31.0 | 26.8 | 26.9 | 23.2 |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

# WATER SUPPLY OUTLOOK
## BITTERROOT RIVER BASIN
## MONTANA
## *as of*

MARCH 1, 1966

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Data included in this report were obtained in cooperation with other Federal, State and private organizations

The current outlook is for only Fair to Poor water supply. Late season irrigation supplies are expected to be below average on streams without reservoir storage.

Those who do not have a good water right or supplemental storage should be prepared for possible late season shortage. It might be well to check with your local SCS Work Unit as information has just been received on alternatives for adapting operations to a variable irrigation water supply.

Snow surveys made near the first of March indicate the mountain snow pack is only about 55 percent of a year ago and 70 percent of the 1948-62 average. Moisture in the soil under the snow pack is above average and will help increase the runoff from the short snow pack.

Streamflow in the Bitterroot is expected to be about 80 percent average from the higher elevation headwaters and tributaries, and about 75 percent average in the main stream of the Bitterroot.

Storage in the two reporting reservoirs is above average.

*Report prepared by*
P.E. FARNES AND S.E. COOK
U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE
BOX 855, BOZEMAN, MONTANA 59715

# BITTERROOT RIVER BASIN

# SNOW SURVEY DATA

AS OF MARCH 1, 1966

(Inches)

| SNOW COURSE | | | CURRENT DATA | | | PAST RECORD | |
|---|---|---|---|---|---|---|---|
| | | | DATE OF SURVEY | SNOW DEPTH | WATER CONTENT | WATER CONTENT | |
| NO. | NAME | ELEVATION | | | | LAST YEAR | AVERAGE |
| 13C16 | Ambrose | 6480 | 3/2 | 39 | 10.2 | 14.8 | 12.1* |
| 13D01 | East Fork R.S. | 5400 | 2/25 | 21 | 4.5 | 9.4 | 7.1* |
| 13D02 | Gibbons Pass | 7100 | 2/25 | 46 | 12.6 | 27.5 | 21.0 |
| 14C05 | Lolo Pass | 5230 | 2/25 | 62 | 20.2 | 34.0 | 32.2* |
| 14C07 | Lost Horse | 5940 | 3/1 | 73 | 20.0 | 36.1 | 30.3* |
| 13D16 | Moose Creek | 6200 | 2/24 | 34 | 10.6 | 21.0 | 14.9 |
| 14D02 | Nez Perce Camp | 5680 | 2/28 | 38 | 9.2 | 18.4 | 12.8* |
| 14D01 | Nez Perce Pass | 6570 | 2/28 | 41 | 10.4 | 20.8 | 14.8* |
| 13D22 | Saddle Mountain | 7940 | 2/25 | 48 | 13.4 | 30.0 | - |
| 14C04 | Savage Pass | 6600 | 3/1 | 73 | 21.4 | 29.4 | 25.0* |
| 13C03 | Skalakho Summit | 7260 | 2/26 | 56 | 17.2 | 32.6 | 22.5* |
| 14C08 | Twin Lakes | 6510 | 3/1 | 90 | 26.6 | 47.0 | 39.5* |

# SOIL MOISTURE DATA

AS OF MARCH 1, 1966

(Inches)

| SOIL MOISTURE STATION | | | SOIL PROFILE | | CURRENT DATA | | PAST RECORD | |
|---|---|---|---|---|---|---|---|---|
| | | | DEPTH | FIELD CAPACITY | DATE OF SURVEY | SOIL MOISTURE | LAST YEAR | **AVERAGE |
| NO. | NAME | ELEVATION | | | | | | |
| 13D18M | Gibbons Pass | 7100 | 48 | 7.1 | 2/25 | 5.0 | 5.5 | 5.6 |
| 14C05M | Lolo Pass | 5250 | 48 | 10.6 | 2/25 | 6.2 | 7.4 | - |
| 13C03M | Skalkaho Summit | 7260 | 48 | 10.8 | 2/26 | 10.0 | 8.9 | - |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

# WATER SUPPLY FORECASTS

WATERSHED V

AS OF MARCH 1, 1966

(1000 Acre Feet)

| NO. | RIVER AND FORECAST POINT | FORECAST PERIOD | FORECAST THIS YEAR | PERCENT AVERAGE | MEASURED FLOW | |
|---|---|---|---|---|---|---|
| | | | | | LAST YEAR* | AVERAGE |
| | WEST FORK BITTERROOT RIVER | | | | | |
| 3425 | Conner (near)(5) | Apr-Sept | 141 | 79 | | 179 |
| | BITTERROOT RIVER | | | | | |
| 3440 | Darby (near) | Apr-Sept | 450 | 77 | 740 | 582 |
| | BLODGETT CREEK | | | | | |
| 3475 | Corvallis (near) | Apr-Sept | 36.3 | 81 | | 44.6 |
| | BITTERROOT RIVER | | | | | |
| 3528 | Missoula (at)(6) | Apr-Sept | 1180 | 76 | | 1553 |

(5) Adjusted for storage in Painted Rocks Reservoir.
(6) Difference in observed flow, Clark Fork above and below Missoula.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

# RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1966

(1000 Acre Feet)

| NO. | RESERVOIR | USABLE CAPACITY | THIS YEAR | LAST YEAR | AVERAGE |
|---|---|---|---|---|---|
| 3420 | Painted Rocks | 31.7 | 16.9 | 22.6 | 13.5 |
| 3445 | Como | 34.9 | 14.6 | 15.4 | 11.8 |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

# WATER SUPPLY OUTLOOK
## MARIAS, TETON and SUN RIVER BASINS
## MONTANA
## *as of*
MARCH 1, 1966

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Data included in this report were obtained in cooperation with other Federal, State and private organizations

The current water supply outlook is Fair to Good. Late season irrigation supplies are expected to be a little below average on streams not having reservoir storage.

Your local SCS Work Unit has just received information on alternatives for adapting operations to a variable irrigation water supply. It might be well to check with these people if you do not have a good water right or supplemental storage.

Snow surveys made near the first of March indicate the mountain snow pack is about two-thirds of last year and 90 percent average.

Moisture in the soil under the snow pack is generally near average.

Streamflow is forecast to be about 25 to 10 percent less than average with the streams having higher elevation headwaters nearer average.

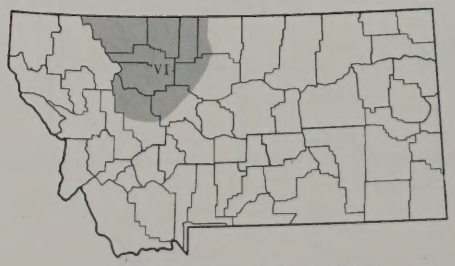
Reservoir storage is about average for this time of year.

*Report prepared by*
P.E. FARNES AND S.E. COOK
U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE
BOX 855, BOZEMAN, MONTANA 59715

# MARIAS, TETON and SUN RIVER BASINS

## LEGEND

- Snow Survey Course
- Soil Moisture Station
- Snow Course and Soil Moisture Station
- Aerial Marker at Snow Course
- Stream Gaging Station
- Drainage
- S.W.C.D. Boundary
- Watershed Boundary
- Highway
- Town
- County Boundary
- State Boundary




WATERSHED LOCATION

# SNOW SURVEY DATA

WATERSHED VI

AS OF MARCH 1, 1966

(Inches)

| SNOW COURSE | | | CURRENT DATA | | | PAST RECORD | |
|---|---|---|---|---|---|---|---|
| | | | DATE OF SURVEY | SNOW DEPTH | WATER CONTENT | WATER CONTENT | |
| NO. | NAME | ELEVATION | | | | LAST YEAR | AVERAGE |
| 13A15 | Badger Pass | 6900 | 2/25 | 76 | 28.7 | 38.6 | - |
| 13A11 | Beaver Lake | 5900 | 2/25 | 54 | 17.5 | 25.7 | - |
| 12B06 | Cabin Creek | 5200 | 2/25 | 21 | 6.6 | 9.7 | 6.8* |
| 12B09 | Five-Bull | 5700 | 3/1 | 30 | 6.1 | 9.8 | 6.1* |
| 12A01 | Freight Creek | 6000 | 2/28 | 49 | 13.2 | 20.4 | 14.5 |
| 12B07 | Goat Mountain | 7000 | 2/28 | 38 | 10.0 | 13.4 | 10.6 |
| 13A18 | Hudson Bay Divide | 5800 | 2/28 | 50 | 15.1 | 19.8 | - |
| 13A05 | Marias Pass | 5250 | 2/25 | 48 | 15.8 | 21.0 | 17.3 |
| 13A16 | Mineral Creek | 4000 | 2/28 | 61 | 17.8 | 26.1 | 19.8 |
| 12B01 | West Fork | 6000 | 2/28 | 40 | 10.1 | 21.8 | 13.4* |
| 12B04 | Wrong Creek | 5700 | 2/25 | 41 | 13.3 | 17.8 | 14.5* |
| 12B03 | Wrong Ridge | 6800 | 2/25 | 48 | 18.5 | 26.0 | 19.6* |

# SOIL MOISTURE DATA

AS OF MARCH 1, 1966

(Inches)

| SOIL MOISTURE STATION | | | SOIL PROFILE | | CURRENT DATA | | PAST RECORD | |
|---|---|---|---|---|---|---|---|---|
| | | | DEPTH | FIELD CAPACITY | DATE OF SURVEY | SOIL MOISTURE | LAST YEAR | **AVERAGE |
| NO. | NAME | ELEVATION | | | | | | |
| 13A05M | Marias Pass | 5250 | 54 | 6.5 | | | 5.8 | 5.3 |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

# WATER SUPPLY FORECASTS

WATERSHED VI

AS OF MARCH 1, 1966

(1000 Acre Feet)

| NO. | RIVER AND FORECAST POINT | FORECAST PERIOD | FORECAST THIS YEAR | PERCENT AVERAGE | MEASURED FLOW | |
|---|---|---|---|---|---|---|
| | | | | | LAST YEAR* | AVERAGE |
| | SUN RIVER | | | | | |
| 0786 | Gibson Dam (at)(17) | Apr-Sept | 565 | 93 | 702 | 610 |
| | MISSOURI RIVER | | | | | |
| 0908 | Fort Benton (at)(18) | Apr-Sept | 2700 | 81 | | 3319 |
| | TWO MEDICINE CREEK | | | | | |
| 0920 | Browning (near)(19) | Apr-Sept | 232 | 86 | | 271 |
| | BADGER CREEK | | | | | |
| 0925 | Browning (near) | Apr-Sept | 122 | 85 | | 143 |
| | CUT BANK CREEK | | | | | |
| 0990 | Cut Bank (near) | Apr-Sept | 108 | 76 | 148 | 142 |
| | MARIAS RIVER | | | | | |
| 0995 | Shelby (near)(20) | Apr-Sept | 537 | 82 | 734 | 651 |

(17) Adjusted for storage in Gibson Reservoir and diversions.
(18) Adjusted for storage in Canyon Ferry Reservoir.
(19) Adjusted for storage in Two-Medicine Reservoir and diversions into Two-Medicine Canal.
(20) Adjusted for storage in Two-Medicine, Four Horns, Lake Frances and Swift Reservoir.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

# RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1966

(1000 Acre Feet)

| NO. | RESERVOIR | USABLE CAPACITY | THIS YEAR | LAST YEAR | AVERAGE |
|---|---|---|---|---|---|
| 0795 | Gibson | 105.0 | 50.8 | 48.0 | 58.5 |
| 0805 | Pishkun | 32.0 | 18.8 | 17.4 | 18.4 |
| 0820 | Willow Creek | 32.3 | 23.8 | 15.8 | 19.6 |
| 0930 | Four Horns | 19.2 | | 13.1 | 10.5 |
| 0940 | Swift | 30.0 | - | - | 22.0 |
| 0955 | Lake Frances | 112.0 | 93.8 | 81.9 | 91.8 |
| 1013 | Tiber | 1,347.0 | 656.1 | 692.1 | 629.4 |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

# WATER SUPPLY OUTLOOK
## MISSOURI RIVER (MAIN STEM) BASIN
## MONTANA
## *as of*

MARCH 1, 1966

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Data included in this report were obtained in cooperation with other Federal, State and private organizations

The current water supply outlook is Fair. Late season irrigation supplies are expected to be below average on streams West of the Missouri River and a little below to near average for those on the East side.

Those who do not have a good water right or supplemental storage should be prepared for possible late season shortage. It might be well to check with your local SCS Work Unit as information has just been received on alternatives for adapting operations to a variable irrigation water supply.

Snow surveys made near the first of March indicate the mountain snow pack is 55 percent of last year and 80 percent average. Percentagewise, snow cover is better in the Belt and Castle mountains than along the Continental Divide.

Streamflow during the spring and summer months is forecast about 20 to 25 percent below average in the southwest portion of the drainage, to about 10 percent below average in the northwest. Streams originating in the Belt and Castle mountains should produce flows about 15 percent below average. The Missouri River is forecast about 20 percent below average.

Irrigation reservoir storage is generally above average for this time of year.

*Report prepared by*
P.E. FARNES AND S.E. COOK
U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE
BOX 855, BOZEMAN, MONTANA 59715

# MISSOURI RIVER (MAIN STEM) BASIN

## LEGEND

- Snow Survey Course
- Soil Moisture Station
- Snow Course and Soil Moisture Station
- Aerial Marker at Snow Course
- Stream Gaging Station
- Drainage
- S.W.C.D. Boundary
- Watershed Boundary
- Highway
- Town
- County Boundary
- State Boundary




WATERSHED LOCATION

# SNOW SURVEY DATA

AS OF MARCH 1, 1966

(Inches)

| SNOW COURSE | | | CURRENT DATA | | | PAST RECORD | |
|---|---|---|---|---|---|---|---|
| | | | DATE OF SURVEY | SNOW DEPTH | WATER CONTENT | WATER CONTENT | |
| NO. | NAME | ELEVATION | | | | LAST YEAR | AVERAGE |
| 11C01 | Boulder Mountain | 7950 | 3/1 | 44 | 12.2 | 17.9 | 12.5* |
| 12C05 | Chessman Reservoir | 6200 | 3/1 | 13 | 2.2 | 3.8 | 4.0 |
| 10C09 | Deadman Creek | 6450 | 3/3 | 36 | 8.7 | - | - |
| 10C07 | Elk Peak | 8000 | 3/2 | 53 | 11.2 | 19.5 | 13.3* |
| 10C02 | Grasshopper | 7000 | 3/2 | 24 | 4.0 | 6.6 | 4.3 |
| 10C01 | Kings Hill | 7500 | 2/28 | 34 | 7.8 | 15.3 | 11.0 |
| 10C06 | Spur Park | 8000 | 3/3 | 56 | 14.7 | 23.4 | 16.0* |
| 12C01 | Stemple Pass | 6600 | 2/28 | 31 | 7.1 | 11.9 | 9.2 |
| 12C02 | Ten Mile Lower | 6600 | 3/1 | 20 | 3.8 | 7.7 | 6.3 |
| 12C03 | Ten Mile Middle | 6800 | 2/28 | 27 | 6.1 | 12.1 | 9.1 |
| 12C04 | Ten Mile Upper | 8000 | 2/28 | 31 | 7.6 | 16.3 | 11.7 |

# SOIL MOISTURE DATA

AS OF MARCH 1, 1966

(Inches)

| SOIL MOISTURE STATION | | | SOIL PROFILE | | CURRENT DATA | | PAST RECORD | |
|---|---|---|---|---|---|---|---|---|
| | | | DEPTH | FIELD CAPACITY | DATE OF SURVEY | SOIL MOISTURE | LAST YEAR | **AVERAGE |
| NO. | NAME | ELEVATION | | | | | | |
| 10C01M | Kings Hill | 7420 | 48 | 11.8 | 3/3 | 8.8 | 7.8 | - |
| 12C08M | Stemple Pass | 6350 | 48 | 5.9 | 2/28 | 4.4 | 4.2 | - |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

# WATER SUPPLY FORECASTS

WATERSHED VII

AS OF MARCH 1, 1966

(1000 Acre Feet)

| NO. | RIVER AND FORECAST POINT | FORECAST PERIOD | FORECAST THIS YEAR | PERCENT AVERAGE | MEASURED FLOW LAST YEAR* | MEASURED FLOW AVERAGE |
|---|---|---|---|---|---|---|
| | MISSOURI RIVER | | | | | |
| 0545 | Toston (at)(16) | Apr-Sept | 1730 | 81 | | 2147 |
| | PRICKLY PEAR CREEK | | | | | |
| 0615 | Clancy (near) | Apr-Sept | 18.0 | 82 | | 22.0 |
| | SHEEP CREEK | | | | | |
| 0770 | White Sulphur Springs (nr) | Apr-Sept | 14.0 | 85 | 32.2 | 16.5 |
| | SUN RIVER | | | | | |
| 0786 | Gibson Dam (at)(17) | Apr-Sept | 565 | 93 | 702 | 610 |
| | MISSOURI RIVER | | | | | |
| 0908 | Fort Benton (at)(18) | Apr-Sept | 2700 | 81 | | 3319 |

(16) Adjusted for storage in Hebgen and Ennis Lakes and Clark Canyon Reservoir.
(17) Adjusted for storage in Gibson Reservoir and diversions.
(18) Adjusted for storage in Canyon Ferry Reservoir.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

# RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1966

(1000 Acre Feet)

| NO. | RESERVOIR | USABLE CAPACITY | THIS YEAR | LAST YEAR | AVERAGE |
|---|---|---|---|---|---|
| 0585 | Canyon Ferry | 2043.0 | 1551.0 | 1763.0 | 1514.9 |
| 0645 | Lake Helena | 10.4 | 10.7 | 10.2 | 7.8 |
| 0650 | Hauser Lk. & Lk. Helena | 61.9 | 62.4 | 61.3 | 53.9 |
| 0660 | Holter Lake | 81.9 | 81.7 | 40.1 | 50.7 |
| 0750 | Smith River | 10.7 | 7.4 | 8.7 | 5.6 |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

# WATER SUPPLY OUTLOOK
## JEFFERSON RIVER and TRIBUTARY BASINS
## MONTANA
## *as of*

MARCH 1, 1966

**UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE**

Data included in this report were obtained in cooperation with other Federal, State and private organizations

The current water supply outlook is Fair to Good. Late season irrigation supplies are expected to be below average on all tributaries without reservoir storage.

Those who do not have a good water right or supplemental storage should be prepared for possible late season shortage. It might be well to check with your local SCS Work Unit as information has just been received on alternatives for adjusting operations to a variable irrigation water supply.

Snow surveys made near the first of March indicate the mountain snow pack is about one-half of last year and 80 percent average in the Beaverhead drainage. The headwaters of the Red Rock has near average snow cover. The Big Hole-Boulder drainage has about a 70 percent average snow cover.

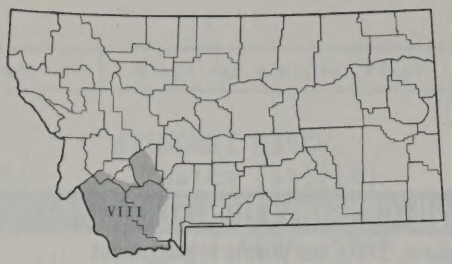
Moisture in the soil under the snow pack is generally above average at higher elevations, decreasing to below average at lower elevations.

Streamflow is forecast near average in the Upper Red Rock and about 15 percent below average on the Big Hole and Boulder drainages. The Ruby River is expected to flow 5 to 10 percent below average.

*Report prepared by*
P.E. FARNES AND S.E. COOK
U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE
BOX 855, BOZEMAN, MONTANA 59715

*"The Conservation of Water begins with the Snow Survey"*

# JEFFERSON RIVER and TRIBUTARY BASINS




WATERSHED LOCATION

# SNOW SURVEY DATA

## AS OF MARCH 1, 1966

(Inches)

| SNOW COURSE | | | CURRENT DATA | | | PAST RECORD | |
|---|---|---|---|---|---|---|---|
| | | | DATE OF SURVEY | SNOW DEPTH | WATER CONTENT | WATER CONTENT | |
| NO. | NAME | ELEVATION | | | | LAST YEAR | AVERAGE |
| 13D20 | Abundance Lake | 8800 | 3/4 | 44 | 13.6 | 24.1 | - |
| 12C07 | Berry Meadow | 7300 | 2/28 | 23 | 5.1 | 8.0 | 6.5* |
| 13D10 | Bloody Dick | 7600 | 2/24 | 26 | 6.2 | 15.4 | 9.6 |
| 11D07 | Call Road | 8050 | 3/4 | 34 | 7.4 | 12.8 | - |
| 12D04 | Carter Creek | 7400 | 3/1 | 14 | 2.5 | 4.4 | - |
| 12C05 | Chessman Reservoir | 6200 | 3/1 | 13 | 2.2 | 3.8 | 4.0 |
| 11D08 | Clover Meadow | 8600 | 3/4 | 40 | 11.0 | 21.7 | - |
| 13E22 | Dad Creek Lake | 8400 | | | | - | - |
| 13D19 | Darkhorse Lake | 8600 | 3/4 | 53 | 16.4 | 34.6 | - |
| 12E07 | Divide | 7900 | 3/4 | 30 | 7.0 | 15.3 | - |
| 13D15 | Elk Horn Springs | 7800 | 2/28 | 32 | 5.9 | 13.4 | 8.8 |
| 13D21 | Foolhen | 8280 | 3/4 | 40 | 10.7 | 22.4 | - |
| 11D12 | Four Mile | 6900 | 2/25 | 22 | 5.3 | - | - |
| 13D02 | Gibbons Pass | 7100 | 2/25 | 46 | 12.6 | 27.5 | 21.0 |
| 13D09 | Gold Stone | 8100 | 2/24 | 32 | 8.2 | 19.7 | 12.4 |
| 13D08 | Jahnke Creek | 7340 | 2/24 | 24 | 5.5 | 13.0 | 8.8 |
| 11E04 | Lakeview Canyon | 6930 | 2/23 | 33 | 9.4 | 18.2 | 9.6 |
| 11E03 | Lakeview Ridge | 7400 | 2/23 | 28 | 7.7 | 16.2 | 8.1 |
| 13E01 | Lemhi Pass | 7480 | 2/23 | 25 | 5.4 | 14.6 | 7.1 |
| 11D11 | Lower Twin | 7900 | 2/25 | 44 | 13.6 | - | - |
| 13D16 | Moose Creek | 6200 | 2/24 | 34 | 10.6 | 21.0 | 14.9 |
| 11D03 | North Meadow | 7500 | 2/25 | 21 | 4.9 | 11.4 | 7.3* |
| 12E06 | Notch | 8500 | 3/4 | 44 | 12.1 | 17.4 | - |
| 12C06 | Picnic Grounds | 6500 | 3/1 | 16 | 2.6 | 4.4 | 4.2* |
| 12D01 | Pipestone Pass | 7200 | 3/1 | 21 | 3.6 | 5.2 | 4.5 |
| 13D22 | Saddle Mountain | 7940 | 2/25 | 48 | 13.4 | 30.0 | - |
| 13C07 | Storm Lake | 7780 | 3/1 | 36 | 7.6 | 16.4 | 11.7* |
| 12C02 | Ten Mile Lower | 6600 | 3/1 | 20 | 3.8 | 7.7 | 6.3 |
| 12C03 | Ten Mile Middle | 6800 | 2/28 | 27 | 6.1 | 12.1 | 9.1 |
| 12C04 | Ten Mile Upper | 8000 | 2/28 | 31 | 7.6 | 16.3 | 11.7 |
| 13E02 | Trail Creek | 7090 | 2/23 | 23 | 4.6 | 12.2 | 6.4 |
| 12E01 | White Pine Ridge | 8850 | 3/4 | 19 | 3.7 | 6.5 | 4.4 |

# SOIL MOISTURE DATA

## AS OF MARCH 1, 1966

(Inches)

| SOIL MOISTURE STATION | | | SOIL PROFILE | | CURRENT DATA | | PAST RECORD | |
|---|---|---|---|---|---|---|---|---|
| | | | DEPTH | FIELD CAPACITY | DATE OF SURVEY | SOIL MOISTURE | LAST YEAR | **AVERAGE |
| NO. | NAME | ELEVATION | | | | | | |
| 13D18M | Gibbons Pass | 7100 | 48 | 7.1 | 2/25 | 5.0 | 5.5 | 5.6 |
| 11E13M | Lakeview | 6700 | 48 | 15.3 | 3/1 | 6.0 | 13.6 | 9.9 |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

# WATER SUPPLY FORECASTS

WATERSHED VIII

AS OF MARCH 1, 1966

(1000 Acre Feet)

| NO. | RIVER AND FORECAST POINT | FORECAST PERIOD | FORECAST THIS YEAR | PERCENT AVERAGE | MEASURED FLOW LAST YEAR* | MEASURED FLOW AVERAGE |
|---|---|---|---|---|---|---|
| | RED ROCK RIVER | | | | | |
| 0110 | Kennedy Ranch (at) | Apr-Sept | 70.0 | 98 | 96.6 | 71.7 |
| | RED ROCK RIVER | | | | | |
| 0125 | Monida (near)(11) | Apr-Sept | 75.0 | 96 | 136 | 78.4 |
| | BIG HOLE RIVER | | | | | |
| 0255 | Melrose (near) | Apr-Sept | 605 | 84 | | 718 |
| | BOULDER RIVER | | | | | |
| 0330 | Boulder (near) | Apr-Sept | 65.0 | 85 | 139 | 76.3 |
| | JEFFERSON RIVER | | | | | |
| 0345 | Sappington (at)(12) | Apr-Sept | 825 | 85 | | 974 |

(11) Adjusted for storage in Lima Reservoir.
(12) Adjusted for storage in Clark Canyon Reservoir.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

# RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1966

(1000 Acre Feet)

| NO. | RESERVOIR | USABLE CAPACITY | THIS YEAR | LAST YEAR | AVERAGE |
|---|---|---|---|---|---|
| 0120 | Lima | 84.0 | 45.9 | 45.7 | 26.1 |
| 0153 | Clark Canyon | 328.9 | 151.1 | 75.7 | - |
| 0205 | Ruby | 38.8 | - | - | 23.0 |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

# WATER SUPPLY OUTLOOK

## MADISON and GALLATIN RIVER BASINS

## MONTANA

*as of*

MARCH 1, 1966

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Data included in this report were obtained in cooperation with other Federal, State and private organizations

The current water supply outlook is only Fair. Late season irrigation supplies are expected to be below average on all tributaries to the Madison and Gallatin Rivers that do not have reservoir storage.

Those who do not have a good water right or supplemental storage should be prepared for possible late season shortage. It might be well to check with your local SCS Work Unit as information has just been received on alternatives for adjusting operations to a variable irrigation water supply.

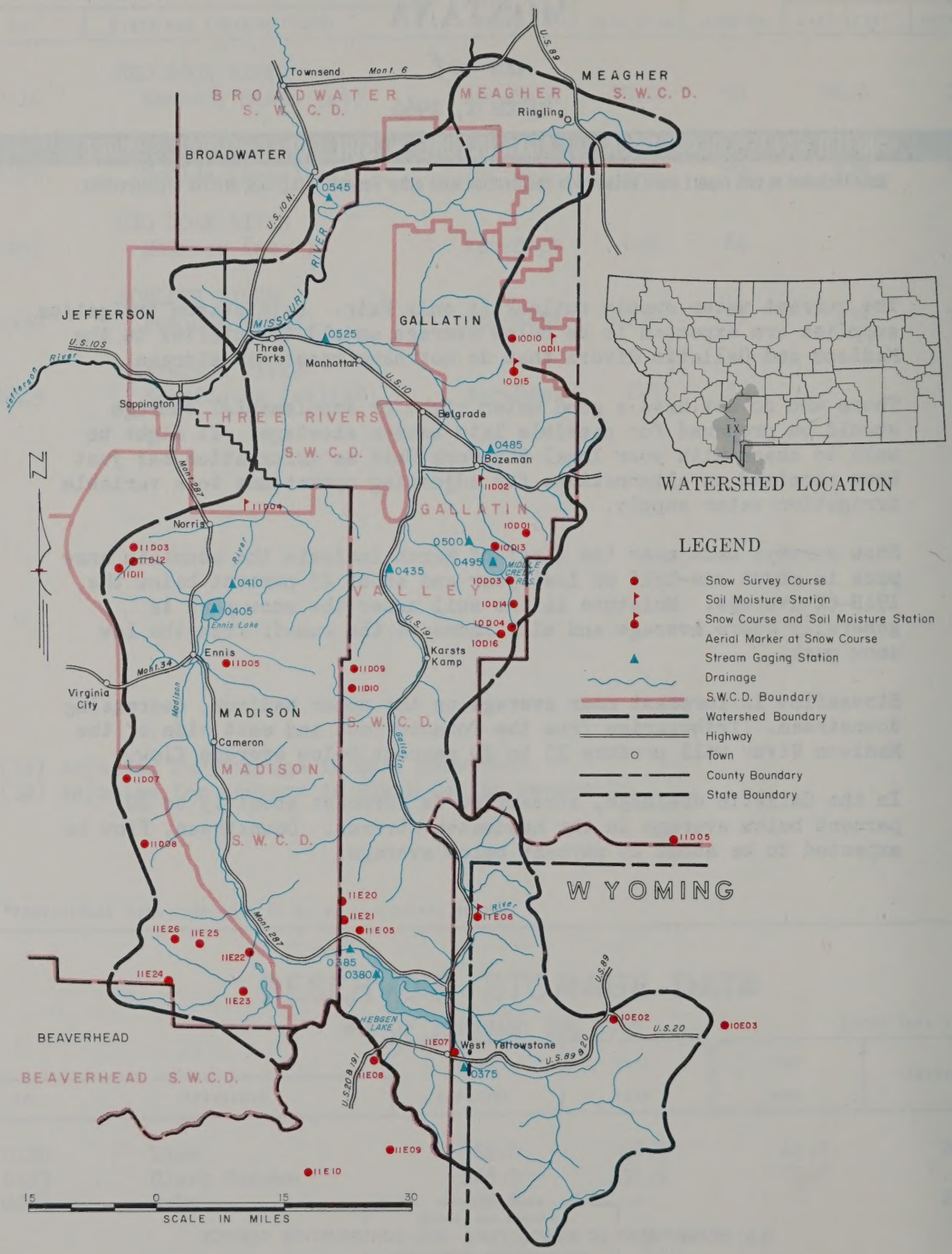
Snow surveys made near the first of March indicate the mountain snow pack is about one-half of last year and about 25 percent below the 1948-62 average. Moisture in the soil under the snow pack is generally above average and will increase the runoff from the low snow pack.

Streamflow is forecast near average on the upper Madison, decreasing downstream. Tributaries from the Tobacco Root and east side of the Madison River will produce 15 to 20 percent below average flow.

In the Gallatin drainage, streamflow is forecast about 15 to 20 percent below average in the headwater streams. Downstream, flow is expected to be about 25 percent below average.

*Report prepared by*
P.E. FARNES AND S.E. COOK
U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE
BOX 855, BOZEMAN, MONTANA 59715

# MADISON and GALLATIN RIVER BASINS



WATERSHED IX

# SNOW SURVEY DATA

## AS OF MARCH 1, 1966

(Inches)

| SNOW COURSE | | | CURRENT DATA | | | PAST RECORD | |
|---|---|---|---|---|---|---|---|
| | | | DATE OF SURVEY | SNOW DEPTH | WATER CONTENT | WATER CONTENT | |
| NO. | NAME | ELEVATION | | | | LAST YEAR | AVERAGE |
| 10D14 | Arch Falls | 7350 | 2/26 | 26 | 6.4 | 14.8 | 9.5* |
| 11D09 | Bear Basin | 8150 | 3/3 | 43 | 12.0 | 22.6 | 16.3* |
| 11E09 | Big Springs | 6500 | 2/25 | 46 | 13.9 | 24.6 | 19.6 |
| 10D15 | Bridger Bowl Pillow | 7250 | 3/1 | SP | 16.2 | 27.0 | - |
| 11D07 | Call Road | 8050 | 3/4 | 34 | 7.4 | 12.8 | - |
| 10E03 | Canyon | 7750 | 2/27 | 39 | 9.8 | 23.4 | 13.1 |
| 11D08 | Clover Meadow | 8600 | 3/4 | 40 | 11.0 | 21.7 | - |
| 10D05 | Crevice Mountain | 8400 | 2/28 | 27 | 6.0 | 11.8 | 7.5 |
| 10D04 | Devil's Slide | 8100 | 2/26 | 46 | 12.2 | 26.3 | 17.4 |
| 11D12 | Four Mile | 6900 | 2/25 | 22 | 5.3 | - | - |
| 11E25 | Freezeout Lake | 7200 | Delayed Report | | | - | - |
| 11E26 | Freezeout Mountain | 8250 | Delayed Report | | | - | - |
| 11E05 | Hebgen Dam | 6550 | 2/26 | 29 | 6.7 | 14.2 | 10.8 |
| 10D03 | Hood Meadow | 6600 | 2/26 | 21 | 4.6 | 11.6 | 7.6 |
| 11E10 | Island Park | 6315 | 2/25 | 40 | 11.2 | 20.4 | 15.3 |
| 11D05 | Jack Creek | 7500 | 3/1 | 16 | 3.0 | 6.4 | 5.0* |
| 11E22 | Lake Creek | 6100 | Delayed Report | | | - | - |
| 10D13 | Lick Creek Pillow | 6860 | 3/2 | SP | 5.6 | 12.6 | - |
| 11D10 | Little Park | 7400 | 3/3 | 35 | 8.5 | 18.6 | 11.4* |
| 11D11 | Lower Twin | 7900 | 2/25 | 44 | 13.6 | - | - |
| 11E23 | Meridian Creek | 7000 | Delayed Report | | | - | - |
| 10D01 | New World | 6700 | 2/25 | 24 | 5.6 | 11.6 | 8.6 |
| 10E02 | Norris Basin | 7500 | 2/27 | 30 | 7.1 | 14.1 | 9.0* |
| 11D03 | North Meadow | 7500 | 2/25 | 21 | 4.9 | 11.4 | 7.3* |
| 11E21 | Potomageton Park | 7150 | 3/1 | 38 | 9.5 | 19.0 | - |
| 10D10 | Sacajawea | 6550 | 2/25 | 32 | 9.0 | 16.4 | 11.1* |
| 11E20 | Sentinel Creek | 8300 | 3/4 | 53 | 15.4 | 32.2 | - |
| 10D16 | Shower Falls Pillow | 8100 | 2/28 | SP | 15.0 | - | - |
| 11E24 | Tepee Creek | 8000 | Delayed Report | | | - | - |
| 10E07 | Thumb Divide | 7900 | 2/26 | 51 | 17.1 | 29.3 | 20.0 |
| 11E06 | Twenty-One Mile | 7150 | 2/26 | 43 | 12.7 | 27.0 | 15.8 |
| 11E08 | Valley View | 6500 | 2/25 | 37 | 10.6 | 24.0 | 13.2 |
| 11E07 | West Yellowstone | 6700 | 2/26 | 27 | 7.0 | 15.0 | 10.6 |

# SOIL MOISTURE DATA

## AS OF MARCH 1, 1966

(Inches)

| SOIL MOISTURE STATION | | | SOIL PROFILE | | CURRENT DATA | | PAST RECORD | |
|---|---|---|---|---|---|---|---|---|
| | | | DEPTH | FIELD CAPACITY | DATE OF SURVEY | SOIL MOISTURE | LAST YEAR | **AVERAGE |
| NO. | NAME | ELEVATION | | | | | | |
| 10D11M | Battle Ridge | 6020 | 48 | 17.6 | 2/25 | 13.0 | 15.6 | 12.8 |
| 10D15M | Bridger Bowl | 7250 | 48 | 15.8 | 3/1 | 15.6 | - | - |
| 11D02M | College Site | 4856 | 54 | 14.5 | 2/25 | 13.5 | 10.0 | 9.3 |
| 10D13M | Lick Creek | 6860 | 48 | 18.8 | 3/2 | 12.1 | - | - |
| 10D04M | Red Bluff | 4800 | 40 | 4.7 | | | 2.3 | 2.2 |
| 11E06M | Twenty-One Mile | 7150 | 48 | 10.0 | 2/28 | 3.0 | 1.5 | - |

SP - Snow Pillow observation - water content only.

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

# WATER SUPPLY FORECASTS

WATERSHED IX

AS OF MARCH 1, 1966

(1000 Acre Feet)

| NO. | RIVER AND FORECAST POINT | FORECAST PERIOD | FORECAST THIS YEAR | PERCENT AVERAGE | MEASURED FLOW | |
|---|---|---|---|---|---|---|
| | | | | | LAST YEAR* | AVERAGE |
| | MADISON RIVER | | | | | |
| 0375 | West Yellowstone (near) | Apr-Sept | 200 | 96 | 272 | 208 |
| | MADISON RIVER | | | | | |
| 0385 | Grayling (near)(13) | Apr-Sept | 400 | 95 | 577 | 420 |
| | MADISON RIVER | | | | | |
| 0410 | McAllister (near)(14) | Apr-Sept | 650 | 90 | 1010 | 718 |
| | GALLATIN RIVER | | | | | |
| 0435 | Gateway (near) | Apr-Sept | 385 | 86 | | 447 |
| | BRIDGER CREEK | | | | | |
| 0485 | Bozeman (near) | Apr-Sept | 16.0 | 80 | 31.3 | 19.9 |
| | HYALITE CREEK | | | | | |
| 0500 | Bozeman (near)(15) | Apr-Sept | 30.7 | 86 | 53.2 | 35.6 |
| | GALLATIN RIVER | | | | | |
| 0525 | Logan (at) | Apr-Sept | 360 | 77 | 747 | 467 |
| | MISSOURI RIVER | | | | | |
| 0545 | Toston (at)(16) | Apr-Sept | 1730 | 81 | | 2147 |

(13) Adjusted for storage in Hebgen Lake.
(14) Adjusted for storage in Hebgen and Ennis Lakes.
(15) Adjusted for storage in Middle Creek Reservoir.
(16) Adjusted for storage in Hebgen and Ennis Lakes and Clark Canyon Reservoir.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

# RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1966

(1000 Acre Feet)

| NO. | RESERVOIR | USABLE CAPACITY | THIS YEAR | LAST YEAR | AVERAGE |
|---|---|---|---|---|---|
| 0380 | Hebgen Lake | 377.5 | 222.3 | 220.8 | - |
| 0405 | Ennis Lake | 41.0 | 38.6 | 33.5 | 37.3 |
| 0495 | Middle Creek | 8.0 | 1.8 | 3.9 | 3.6 |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

# WATER SUPPLY OUTLOOK
## JUDITH and MUSSELSHELL RIVER BASINS
## MONTANA

*as of*

MARCH 1, 1966

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Data included in this report were obtained in cooperation with other Federal, State and private organizations

The current water supply outlook is Fair to Good. Late season irrigation supplies are expected to be a little below to near average on streams not having reservoir storage.

Your local SCS Work Unit has just received information on alternatives for adapting operations to a variable irrigation water supply. It might be well to check with them if you have a variable irrigation water supply.

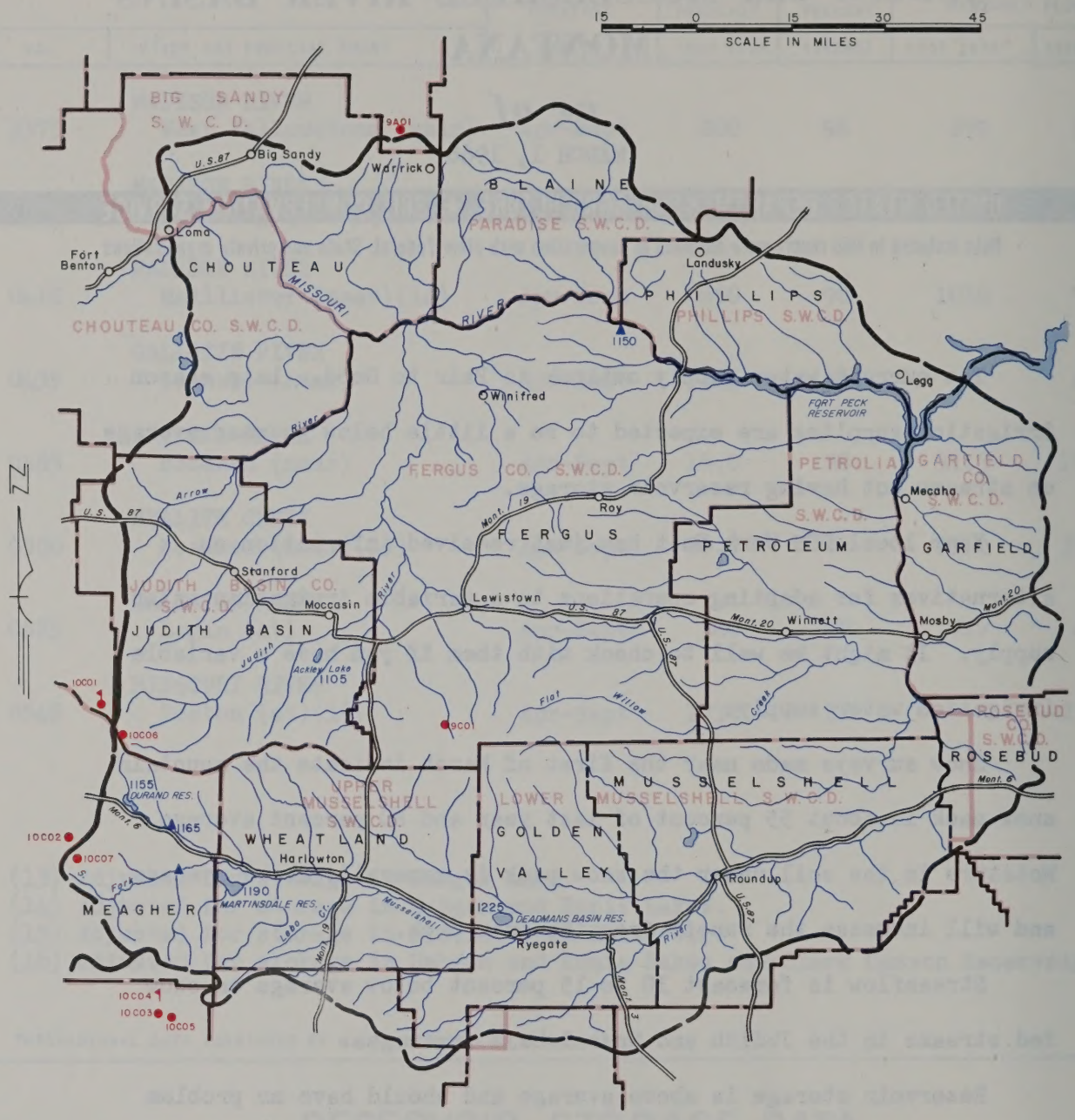
Snow surveys made near the first of March indicate the mountain snow pack is about 55 percent of last year and 80 percent average. Moisture in the soil under the snow pack is generally above average and will increase the runoff from the snow pack.

Streamflow is forecast 10 to 15 percent below average on snow fed streams in the Judith and Musselshell drainages.

Reservoir storage is above average and should have no problem in filling.

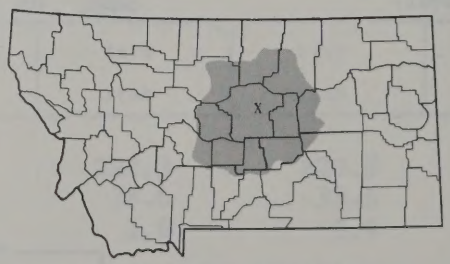
*Report prepared by*
P.E. FARNES AND S.E. COOK
U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE
BOX 855, BOZEMAN, MONTANA 59715

# JUDITH and MUSSELSHELL RIVER BASINS




## LEGEND

- Snow Survey Course
- Soil Moisture Station
- Snow Course and Soil Moisture Station
- Aerial Marker at Snow Course
- Stream Gaging Station
- Drainage
- S.W.C.D. Boundary
- Watershed Boundary
- Highway
- Town
- County Boundary
- State Boundary




WATERSHED LOCATION

# SNOW SURVEY DATA

WATERSHED X

AS OF MARCH 1, 1966

(Inches)

| SNOW COURSE | | | CURRENT DATA | | | PAST RECORD | |
|---|---|---|---|---|---|---|---|
| | | | DATE OF SURVEY | SNOW DEPTH | WATER CONTENT | WATER CONTENT | |
| NO. | NAME | ELEVATION | | | | LAST YEAR | AVERAGE |
| 10C05 | Bald Ridge | 7500 | 3/2 | 34 | 7.4 | 15.6 | 9.2* |
| 9C01 | Crystal Lake | 6100 | 3/4 | 36 | 8.1 | 13.6 | 10.5 |
| 10C09 | Deadman Creek | 6450 | 3/3 | 36 | 8.7 | - | - |
| 10C07 | Elk Peak | 8000 | 3/2 | 53 | 11.2 | 19.5 | 13.3* |
| 10C02 | Grasshopper | 7000 | 3/2 | 24 | 4.0 | 6.6 | 4.3 |
| 10C01 | Kings Hill | 7500 | 2/28 | 34 | 7.8 | 15.3 | 11.0 |
| 10C03 | Porcupine R.S. | 6500 | 3/2 | 23 | 4.5 | 9.3 | 6.3 |
| 9A01 | Rocky Boy | 5200 | 3/1 | 15 | 3.0 | 4.6 | 4.2 |
| 10C08 | South Fork Shields | 8100 | 3/2 | 60 | 16.1 | 29.4 | - |
| 10C06 | Spur Park | 8000 | 3/3 | 56 | 14.7 | 23.4 | 16.0* |

# SOIL MOISTURE DATA

AS OF MARCH 1, 1966

(Inches)

| SOIL MOISTURE STATION | | | SOIL PROFILE | | CURRENT DATA | | PAST RECORD | |
|---|---|---|---|---|---|---|---|---|
| | | | DEPTH | FIELD CAPACITY | DATE OF SURVEY | SOIL MOISTURE | LAST YEAR | **AVERAGE |
| NO. | NAME | ELEVATION | | | | | | |
| 10C01M | Kings Hill | 7420 | 48 | 11.8 | 3/3 | 8.8 | 7.8 | - |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

# WATER SUPPLY FORECASTS

WATERSHED X

AS OF MARCH 1, 1966

(1000 Acre Feet)

| NO. | RIVER AND FORECAST POINT | FORECAST PERIOD | FORECAST THIS YEAR | PERCENT AVERAGE | MEASURED FLOW | |
|---|---|---|---|---|---|---|
| | | | | | LAST YEAR* | AVERAGE |
| | JUDITH RIVER | | | | | |
| 1100 | Utica (near) | Apr-Sept | 29.5 | 88 | 71.5 | 33.5 |
| | MISSOURI RIVER | | | | | |
| 1150 | Zortman (near)(21) | Apr-Sept | 3670 | 81 | | 4508 |
| | NORTH FORK MUSSELSHELL R. | | | | | |
| 1155 | Delpine (near) | Apr-Sept | 5.0 | 83 | 10.0 | 6.0 |
| | SOUTH FORK MUSSELSHELL R. | | | | | |
| 1185 | Martinsdale (above) | Apr-Sept | 41.0 | 84 | 73.6 | 48.8 |

(21) Adjusted for storage in Canyon Ferry and Tiber Reservoirs.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

# RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1966

(1000 Acre Feet)

| NO. | RESERVOIR | USABLE CAPACITY | THIS YEAR | LAST YEAR | AVERAGE |
|---|---|---|---|---|---|
| 1105 | Ackley Lake | 5.8 | - | - | 3.5 |
| 1165 | Durand | 7.0 | 5.4 | 6.3 | 4.2 |
| 1190 | Martinsdale | 23.1 | 11.8 | 7.5 | 8.0 |
| 1225 | Deadman's Basin | 72.2 | 67.4 | 48.0 | 39.8 |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

# WATER SUPPLY OUTLOOK
## UPPER YELLOWSTONE RIVER BASIN
## MONTANA
## *as of*

MARCH 1, 1966

**UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE**

Data included in this report were obtained in cooperation with other Federal, State and private organizations

The current water supply outlook is Fair to Good. Late season irrigation supplies are expected to be a little below average on the Shields, Boulder and Stillwater, and below average on the Clarks Fork and Rock Creek.

Your local SCS Work Unit has just received information on alternatives for adapting operations to a variable irrigation water supply. It might be well to check with them if you have a variable water supply.

Snow surveys made near the first of March indicate the mountain snow pack is about one-half of last year and 80 percent average.

Two new snow courses, Cooke Station and Fisher Creek, have been established in the headwaters of the Clarks Fork north of Cooke City.

Moisture in the soil under the snow pack is generally above average and will increase runoff from the snow pack.

Streamflow is forecast 10 to 15 percent below average in the upper Yellowstone, Shields and Clarks Fork drainages and about 20 percent below average on the Boulder, Stillwater and Rock Creek.

*Report prepared by*
P.E. FARNES AND S.E. COOK
U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE
BOX 855, BOZEMAN, MONTANA 59715

# UPPER YELLOWSTONE RIVER BASIN

MT-11b

# SNOW SURVEY DATA

WATERSHED XI

AS OF MARCH 1, 1966

(Inches)

| SNOW COURSE NO. | NAME | ELEVATION | CURRENT DATA: DATE OF SURVEY | CURRENT DATA: SNOW DEPTH | CURRENT DATA: WATER CONTENT | PAST RECORD: WATER CONTENT: LAST YEAR | PAST RECORD: WATER CONTENT: AVERAGE |
|---|---|---|---|---|---|---|---|
| 10C05 | Bald Ridge | 7500 | 3/2 | 34 | 7.4 | 15.6 | 9.2* |
| 10D15 | Bridger Bowl Pillow | 7250 | 3/1 | SP | 16.2 | 27.0 | - |
| 9D01 | Camp Senia | 7890 | 2/24 | 9 | 2.1 | 5.8 | 4.8* |
| 10E03 | Canyon | 7750 | 2/27 | 39 | 9.8 | 23.4 | 13.1 |
| 9D07 | Cook Station | 8150 | 2/25 | 42 | 11.6 | New Course | |
| 10D05 | Crevice Mountain | 8400 | 2/28 | 27 | 6.0 | 11.8 | 7.5 |
| 10D04 | Devil's Slide | 8100 | 2/26 | 46 | 12.2 | 26.3 | 17.4 |
| 10E06 | East Entrance | 7000 | 3/1 | 35 | 7.3 | 12.1 | 10.4* |
| 9D06 | Fisher Creek | 9100 | 2/25 | 75 | 25.3 | New Course | |
| 9D05 | Grizzly Peak | 8400 | 2/28 | 22 | 6.6 | 16.8 | 10.1* |
| 10D06 | Independence | 8000 | 2/28 | 41 | 11.2 | 21.6 | 15.6* |
| 10E04 | Lake Camp | 7850 | 2/28 | 29 | 5.5 | 13.2 | 9.0 |
| 9E01 | Lodgepole | 8200 | 2/27 | 24 | 5.5 | 9.9 | 8.6* |
| 10E01 | Lupine Creek | 7300 | 3/1 | 33 | 7.5 | 14.2 | 9.5 |
| 10D12 | Monument Peak | 9000 | 2/28 | 50 | 15.2 | 33.6 | 18.1* |
| 10E02 | Norris Basin | 7500 | 2/27 | 30 | 7.1 | 14.1 | 9.0* |
| 10D07 | Northeast Entrance | 7400 | 2/28 | 22 | 5.0 | 13.1 | 7.5 |
| 10C03 | Porcupine R.S. | 6500 | 3/2 | 23 | 4.5 | 9.3 | 6.3 |
| [illegible]D10 | Sacajawea | 6550 | 2/25 | 32 | 9.0 | 16.4 | 11.1* |
| 10D16 | Shower Falls Pillow | 8100 | 2/28 | SP | 15.0 | - | - |
| 10C08 | South Fork Shields | 8100 | 3/2 | 60 | 16.1 | 29.4 | - |
| 10E05 | Sylvan Pass | 7100 | 3/1 | 40 | 8.7 | 16.8 | 12.6 |
| 10E07 | Thumb Divide | 7900 | 2/26 | 51 | 17.1 | 29.3 | 20.0 |
| 9D04 | Timberline Creek | 8850 | 2/24 | 28 | 6.8 | 19.5 | 10.9* |
| 9D02 | West Rosebud | 7500 | | | | 16.9 | - |

SP - Snow Pillow Observation - Water Content only.

# SOIL MOISTURE DATA

AS OF MARCH 1, 1966

(Inches)

| SOIL MOISTURE STATION NO. | NAME | ELEVATION | SOIL PROFILE: DEPTH | SOIL PROFILE: FIELD CAPACITY | CURRENT DATA: DATE OF SURVEY | CURRENT DATA: SOIL MOISTURE | PAST RECORD: LAST YEAR | PAST RECORD: **AVERAGE |
|---|---|---|---|---|---|---|---|---|
| 10D11M | Battle Ridge | 6020 | 48 | 17.6 | 2/25 | 13.0 | 15.6 | 12.8 |
| 10D15M | Bridger Bowl | 7250 | 48 | 15.8 | 3/1 | 15.6 | - | - |
| 10D07M | Northeast Entrance | 7350 | 48 | 9.4 | 2/28 | 7.5 | 5.9 | 6.9 |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

# WATER SUPPLY FORECASTS

WATERSHED XI

AS OF MARCH 1, 1966

(1000 Acre Feet)

| NO. | RIVER AND FORECAST POINT | FORECAST PERIOD | FORECAST THIS YEAR | PERCENT AVERAGE | MEASURED FLOW LAST YEAR* | MEASURED FLOW AVERAGE |
|---|---|---|---|---|---|---|
| 1915 | YELLOWSTONE RIVER<br>Corwin Springs (at) | Apr-Sept | 1720 | 92 | 2565 | 1877 |
| 1925 | YELLOWSTONE RIVER<br>Livingston (near) | Apr-Sept | 1920 | 90 | | 2127 |
| 1935 | SHIELDS RIVER<br>Clyde Park (at) | Apr-Sept | 85.0 | 86 | | 99.0 |
| 2000 | BOULDER RIVER<br>Big Timber (at) | Apr-Sept | 282 | 82 | | 343 |
| 2050 | STILLWATER RIVER<br>Absarokee (near)(25) | Apr-Sept | 445 | 81 | | 552 |
| 2075 | CLARKS FORK RIVER<br>Chance (at) | Apr-Sept | 520 | 89 | | 583 |
| 2085 | CLARKS FORK RIVER<br>Edgar (at) | Apr-Sept | 542 | 89 | | 609 |
| 2095 | ROCK CREEK<br>Red Lodge (near) | Apr-Sept | 83.5 | 81 | 142 | 103 |
| 2145 | YELLOWSTONE RIVER<br>Billings (at) | Apr-Sept | 3260 | 83 | 5544 | 3913 |

(25) Adjusted for storage in Mystic Lake.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

# RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1966

(1000 Acre Feet)

| NO. | RESERVOIR | USABLE CAPACITY | THIS YEAR | LAST YEAR | AVERAGE |
|---|---|---|---|---|---|
| 2040 | Mystic Lake | 20.8 | 10.5 | 8.5 | 7.8 |
| 2120 | Cooney | 27.5 | 17.9 | 14.8 | 11.1 |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

# WATER SUPPLY OUTLOOK

## MILK RIVER BASIN

## MONTANA

*as of*

MARCH 1, 1966

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Data included in this report were obtained in cooperation with other Federal, State and private organizations

The current water supply outlook is Good. Flow of the Milk and St. Mary Rivers is expected to be about 5 percent below average.

Reservoir storage is above average.

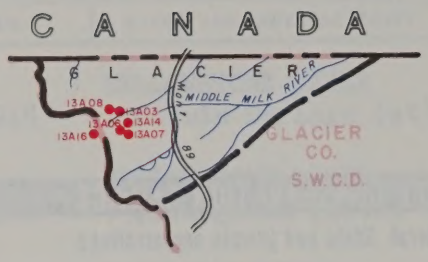
The irrigation water supply is expected to be adequate.

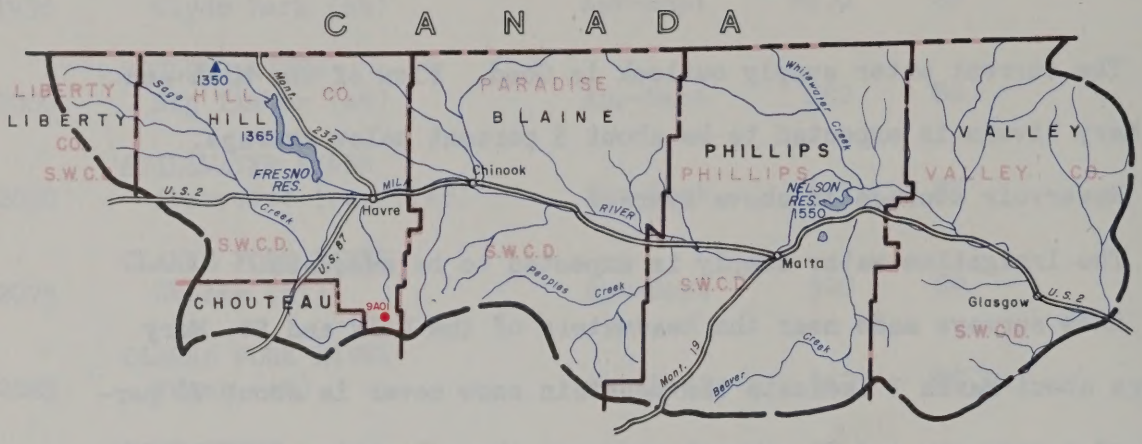
Snow surveys made near the headwaters of the Milk and St. Mary Rivers about March 1 indicate the mountain snow cover is about 70 percent of a year ago and 90 percent average. Low elevation snow in the Milk River drainage is a little greater than a year ago and 120 percent average.

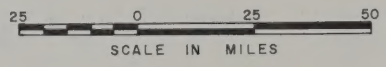
*Report prepared by*
P.E. FARNES AND S.E. COOK
U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE
BOX 855, BOZEMAN, MONTANA 59715

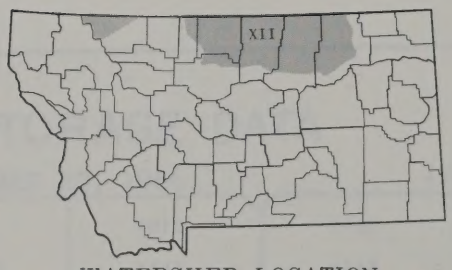
*"The Conservation of Water begins with the Snow Survey"*

# MILK RIVER BASIN






WATERSHED LOCATION

## LEGEND

- Snow Survey Course
- Soil Moisture Station
- Snow Course and Soil Moisture Station
- Aerial Marker at Snow Course
- Stream Gaging Station
- Drainage
- S.W.C.D. Boundary
- Watershed Boundary
- Highway
- Town
- County Boundary
- State Boundary

# SNOW SURVEY DATA

## AS OF MARCH 1, 1966

(Inches)

| SNOW COURSE NO. | NAME | ELEVATION | CURRENT DATA: DATE OF SURVEY | CURRENT DATA: SNOW DEPTH | CURRENT DATA: WATER CONTENT | PAST RECORD: WATER CONTENT: LAST YEAR | PAST RECORD: WATER CONTENT: AVERAGE |
|---|---|---|---|---|---|---|---|
| 13A18 | Hudson Bay Divide | 5800 | 2/28 | 50 | 15.1 | 19.8 | - |
| 13A05 | Marias Pass | 5250 | 2/25 | 48 | 15.8 | 21.0 | 17.3 |
| 13A16 | Mineral Creek | 4000 | 2/28 | 61 | 17.8 | 26.1 | 19.8 |
| 9A01 | Rocky Boy | 5200 | 3/1 | 15 | 3.0 | 4.6 | 4.2 |
| | CYPRESS HILLS - CANADA | | | | | | |
| 10AA2 | Cress Day B | 3450 | 2/28 | 9 | 2.3 | 2.8 | 1.3* |
| 9AA1 | Cypress Park C | 4000 | 3/1 | 18 | 4.2 | 1.9 | 4.1* |
| 10AA1 | Elkwater Lake A | 4100 | 2/28 | 8 | 1.8 | 1.7 | 2.0* |
| 7AA1 | Val Marie D | 2700 | 3/3 | 9 | 1.9 | 3.0 | 1.1* |

# SOIL MOISTURE DATA

## AS OF MARCH 1, 1966

(Inches)

| SOIL MOISTURE STATION NO. | NAME | ELEVATION | SOIL PROFILE: DEPTH | SOIL PROFILE: FIELD CAPACITY | CURRENT DATA: DATE OF SURVEY | CURRENT DATA: SOIL MOISTURE | PAST RECORD: LAST YEAR | PAST RECORD: **AVERAGE |
|---|---|---|---|---|---|---|---|---|
| 13A05M | Marias Pass | 5250 | 54 | 6.5 | | | 5.8 | 5.3 |

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

# WATER SUPPLY FORECASTS

WATERSHED XII

AS OF MARCH 1, 1966

(1000 Acre Feet)

| NO. | RIVER AND FORECAST POINT | FORECAST PERIOD | FORECAST THIS YEAR | PERCENT AVERAGE | MEASURED FLOW | |
|---|---|---|---|---|---|---|
| | | | | | LAST YEAR* | AVERAGE |
| | ST. MARY RIVER | | | | | |
| 0175 | Babb (near)(30) | Apr-Sept | 459 | 94 | | 491 |
| | MILK RIVER | | | | | |
| 1350 | Eastern Crossing (at) | Mar-Sept | 260 | 96 | 352 | 272 |

(30) Adjusted for storage in Lake Sherburne.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

# RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1966

(1000 Acre Feet)

| NO. | RESERVOIR | USABLE CAPACITY | THIS YEAR | LAST YEAR | AVERAGE |
|---|---|---|---|---|---|
| 1365 | Fresno | 127.2 | 81.5 | 62.8 | 58.6 |
| 1550 | Nelson | 66.8 | 48.7 | 35.6 | 35.4 |